

Views of students', teachers' and parents' on the tablet computer usage in education

Emrah Soykan*, Department of Computer Education and Instructional Technology, Near East University, Nicosia, North Cyprus, Mersin 10 Turkey.

Suggested Citation:

Soykan, E. (2015). Views of students', teachers' and parents' on the tablet computer usage in education. *Cypriot Journal of Educational Sciences*. 10(3), 228-244.
doi: <http://dx.doi.org/10.18844/cjes.v1i1.68>

Received July 10, 2015; revised August 19, 2015; accepted September 19, 2015.

Selection and peer review under responsibility of Prof Dr. Huseyin Uzunboylu & Assist. Prof. Dr. Cigdem Hursen, Near East University.

©2015 SciencePark Research, Organization & Counseling. All rights reserved.

Abstract

This study aims at identification of views of teachers, students and their parents at Near East College in North Cyprus on use of tablets in education. The research is a descriptive case study. In collection of data, semi-structured interviews appropriate for qualitative research methods are used. Study group for this research is composed of high educated teachers (f=64), students (f=319) and also parents (f=134). As result of the analysis carried out in this research which was performed in this direction, it has been seen that teachers, students and parents evaluate the problems related with tablet PCs under the following two sub-dimensions; the experienced problems of during tablet supported education and the benefits of tablet pc usage in education. If we look at the results in this line, we come across with connectivity and technical infrastructure problems which interrupts the lesson or even causes it to end as the biggest problem experienced by teachers and students during the learning activities. The biggest concern of parents, another of our study groups, regarding the use of tablets in education is that games may decrease students' motivation. Teachers stated the biggest benefit provided by tablet supported education is the increase in learning speed of students as a result of visuals and interaction provided by tablets.

Keywords: mobile learning, tablet pcs, tablet pc supported instruction, technology based instruction, information technology.

*ADDRESS FOR CORRESPONDENCE: **Emrah Soykan**, Department of Computer Education and Instructional Technology, Near East University, Nicosia, North Cyprus, Mersin 10 Turkey. *E-mail address:* emrah.soykan@neu.edu.com /
Tel.: +90-548-883-6724

1. Introduction

Conceptual changes are experienced in our contemporary world where technological developments are constantly renewed and ways of accessing information are diversified. This fast change and transformation process is affecting all stages of life both in the world and in our country. Being able to cultivate the society well and direct individuals is possible with renewal and organization of education and training environments so as to keep up with the innovations of the era (Tariman, 2011; Terras & Ramsay, 2012). Functions of the mind such as imagination, rhythm, shape and unusual alternative thinking, synthesis and inference are not actively used in traditional teacher-centred teaching methods based on lectures. Since on the basis of modern teaching methods the measure is the systems used by the human in perception with five senses and their degree of effectiveness, individual learning is taken into consideration and class is taken out of the dimension of a conference room and transformed into an interactive environment (Stickel, 2009; Romney, 2010; Loch, Galligan, Hobohm & McDonald, 2011; Mulholland, 2011; Martin, Diaz, Sanristobal, Gil, Castro & Peire, 2011; Gok, 2012; Fadare, Aladeselu, Ekuobase, Aboderin & Kumuyi, 2013). Since the main goal in modern teaching techniques, which put the student in the centre, is to own knowledge and the ability to use what's learned in real life, the attention of the students in class is always tried to be kept at a high level. It is observed that academic studies supported by multimedia applications, increase the students' skills in higher-level cognitive thinking and in addition to contributing positively to student achievement both motivate students and help increasing their academic achievements (Altun, Yigit & Adanur, 2011; Adalier, 2012; Genc & Genc, 2013; Ozdamli & Uzunboylu, 2014). It is for this reason that the requirement for the usage of technological devices that appeal to our senses in education emerges.

It is possible to benefit from education technologies which aim to make education fun and more permanent. Multimedia training materials such as visual and audio training documents, internet, simulations, animations, e-libraries, e-books, projections, tablet, smart board etc. can help students to easily understand subjects and embody the information.

Technology use in lessons, affects positively the student's attitude both towards lesson and technology as well as contributing indirectly to the increase of success. In addition to this, with the use of technology it has been observed that even students who are troubled in terms of academic success attend to the lesson and try to be active. The use of technology in education and training environments contributes towards enrichment of the lesson for both the teacher and the student. The use of computers and internet which became a necessity for individuals parallel with fast development of technology has gained a new dimension with the introduction of mobile technology. Especially in the field of education owing to mobile technology's accessibility and portability features, learning activities such as exercise and practice can now be carried out outside the classroom environment (Saran, Seferoglu & Cagiltay, 2009). Increase in the use of tablets as the most used mobile device also increased its use in education (Tarimer & Okumus, 2010). Benefits provided by mobile learning can be summarised as more flexible, accessible and customised learning activities (Dewitt & Siraj, 2010). Mobile devices' small size and portability, as their most important feature, provide the users with the opportunity to continue their education everywhere (Uzunboylu, Cavus & Ercag, 2009; Vavoula, Sharples, Rudman, Meek & Lonsdale, 2009; Wang, Doll, Deng, Park & Yang, 2013).

Despite setting its direction based on the needs of the society and aiming at bringing novelties in terms of living, the applicability of new technology changes depending on the structure of the society and time. Use of mobile education devices and preference for mobile learning environments depends on adoption and acceptance of individuals at the relevant level of education. When the studies on this subject are analysed it is observed that the technology acceptance model explains the use and adoption of mobile learning and mobile technology for education (Park, 2009; Wang, Wu & Wang, 2009; Park, Nam & Cha, 2012). Despite the emphasis on positive expectations on tablets which have recently entered into teaching environments in our country, it is observed that studies on negative sides experienced by the users and elimination of these negativities are very limited. It is observed that studies tend to be more on possible contribution of tablets to learning and teaching environment and no comprehensive

study has been made regarding the negativities experienced (Price & Simon, 2009; Stickel, 2009; Mendelsohn, 2012; Mills, 2012). Parallel to the developments in information technology, tablet technology has also developed and is becoming more widely used in learning-teaching environments. Accordingly, it is of great importance that this technology which is intended to be integrated into learning-teaching environments in North Cyprus achieves the targeted success. A good planning, evaluation of the process and its analysis are very important for success of such projects which are believed to have great contribution towards the education system of our country. At this point, identification of advantages, disadvantages and defects of new technologies introduced into learning environment contributes towards development of the right strategies in order to more effectively use the technology. Gains and problems of teachers and students who use new technology in the learning environment should be and proposals for the solutions of these problems must be reflected in the application. Also, the parental side of education which is another important dimension should not be forgotten. Students spend most of their time with their families. Therefore, an analysis of the subject matter from the perspective of parents is important. For this, research on already active users of this new technology is required. In this way the problems and needs of users experienced while using tablets will be identified, strategies for effective use of technology can be developed in the future.

1.1. Purpose

This study aims at identification of views of teachers, students and their parents at Near East College in North Cyprus on use of tablets in education.

2. Methodology

All The research is a descriptive case study. In collection of data, semi-structured interviews appropriate for qualitative research methods are used. This method is preferred in order to reveal the views of the study group in depth on the use of tablets in education.

2.1. Study Group

Study group consisted of 319 students in 6th and 9th grades of Near East College and their 64 teachers and 134 parents. 55 of the teachers (85.9%) of teachers are female and 9 (14.1%) are male. Average age of teachers participating in the study is 33.4. 38 of teachers (59.4%) are university graduates, 24 teachers hold a postgraduate degree (37.5%) and 2 teachers have a PhD (3.1%). 33 of teachers (51.6%) have used an iPad before, whereas 31 of them (48.4%) have not used an iPad before.

160 of students (50.2%) are female and 159 (49.8%) male. The average age of students is 13.1. All students who participated in the study do have internet access in their homes. For 104 students (32.6%) the frequency of internet usage is 1 hour or less per day, for 144 (45.1%) it is 2-3 hours per day, and for 71 (22.3%) it is 4 hours or more per day.

80 of the parents are female (%59.7) and 54 are male (40.3%). The average age of parents who participated in the study is 40.9. 4 of parents (3%) are primary school graduates, 52 (38.8%) are high school graduates, 64 (47.8%) are university graduates, 10 (7.5%) do have a postgraduate degree and 3(28.4%) have a PhD. This study is limited to students studying at 6th and 9th grades of Near East College during 2014-2015 spring term and their teachers and parents.

2.2. Implementation

In 2013-2014 spring term Near East College started tablet supported education which is an important step in increasing the education quality in our country. At the beginning of the term all students and teachers received an iPad 2. Teachers and students received a 4-hour general training on how to use tablets.

Tablets have been used for the duration of the whole semester (18 weeks) for all courses in the curriculum. Owing to educational applications both in and outside of the class teachers and students were able to be in constant communication and they actively used their tablets. Internet infrastructure was created at school and optimized for tablet use, and connectivity and information sharing between the student and the teacher have been activated. As a result interaction in class has increased and students were provided an interactive learning environment.

Applications used in this process can be categorized into two. Applications used in class are Annotating Pdf, iBook, Explain Everything, educational animations and video applications. Outside the class Showbie, an application which allows for constant contact with students and provides virtual classroom support, has been used. Through tablet supported education and used applications many theories and approaches in learning are being effectively planned and applied.

Project based learning exercises in accordance with course subjects or technology supported collaborative learning activities can be conducted in an easy and active manner thanks to tablet supported education (Jones & Sinclair, 2011). In addition to this students and teachers benefitted from Dropbox application which allows for information storage and sharing.

2.3. Applications used within the scope of Tablet Supported Education Project

Throughout the process of tablet supported education many paid and unpaid educational applications have been used. Paid applications were obtained by the school administration before the tablets were distributed to students and were made available for use with preparing the internet infrastructure.

Applications used are;

Showbie: With this application teachers can easily share information with their students, create virtual classroom environment where they can communicate with their students and conduct interactive lessons.

TeacherKit: This application is a student analysis application which allows teachers to set up performance profiles for students and create graphs regarding assignment follow-up, attendance and performance.

Annotating Pdf: This application provides students with the opportunity to work on and take notes on pdf documents distributed via tablets or provided in lesson.

Goodreader: This application is a great document reader. It supports many documents including PDF, TXT, Microsoft Word and Power Point. In addition to this it can play music and video files supported by iPad by default.

Explain Everything: With the help of this application we can keep a record of the studies we have conducted and documents we have created, and also allow other users to benefit from these.

iBooks: In addition to iPad available for iPhone and iPod Touch, this application allows you to work on e-books with doc, pdf and txt extensions.

ePrint: This application provides the possibility of getting a printout via wireless connection. Thus, students and teachers can print documents via the wireless network provided by the school.

Notes Plus: It is an application we can use either in class or in personal work which presents text and drawings together. Note Plus enables ability to simultaneously work with different files, the ability to add a voice note to a file, a unique application which allows you to add images in addition to text and drawings to your files.

2.4. Data Collection Tools

In this study a semi-structured interview form was developed addressing students, teachers and parents. An interview schedule has been prepared together with the administrative authorities. All interviews have been conducted face to face between the dates 3 March -25 March 2014 by the researcher himself. Data collected during the interviews are recorded both in written and audio format.

Five academic experts in their fields have been consulted for the validity and preparation of the interview forms. Questions used in the interview forms are as follows:

2.4.1. Interview questions for Teachers

- What are the problems you experienced during tablet supported education?
- What are the advantages provided for you by tablet supported education?

2.4.2. Interview questions for Students

- What are the problems you experienced during tablet supported education?
- What are the benefits of tablet usage in education?

2.4.3. Interview Questions for Parents

- What are your concerns regarding the tablet supported education process?
- What are the advantages of tablet supported education for your children?

2.1. Data Analysis

Descriptive analysis has been performed on qualitative data collected throughout the research. Descriptive analysis has been conducted following the steps of coding of the data, identification and organization of themes and finally identification and analysis of findings. Also frequencies of data has been quantified and tabulated.

3. Findings

Views of students, teachers and parents on the use of tablets in education, findings resulting from interviews are presented in this section. Codification and tabulation of data collected as a result of interviews have been created by the researcher. Tables created by the researchers are detailed below in relation to the interview questions.

3.1. Views of Teachers on the Use of Tablets in Education

3.1.1. Problems experienced by the teachers throughout the process of education with tablet are listed in Table 1.

Table 1. Teachers' views on problems they experience during education with tablet

Views	f
Problems relating to connection and technical infrastructure	45
Games being played more than necessary affect motivation	29
Access to social networks during lesson	21
Awareness-raising is necessary on the educational purposes	20
Teachers feeling inadequate on using an iPad, they would like to have training	19
It causes students to be anti-social	18
Freeze moments in devices causes loss of concentration	7
Causes laziness	6
It is difficult to control in class, we cannot see what students are busy with	5
Falling behind in class due to low battery	5
Difficulty in transferring materials into iPad	5
Insufficient material	4
Insufficiency in taking notes and preparing for the exams with insufficient notes	3
Ethical concerns (taking photographs during lesson and using for wrong purposes)	3

As it can be seen in Table 1, the problem experienced the most by the teachers during education with tablet are problems relating to connectivity and technical infrastructure. Also according to teachers students spending too much time on games outside causes decrease in motivation in class. The opinions least stated are insufficient material in some courses, students studying with insufficient notes due to students not keeping their notes properly with the tablets and photographs being taken during class and these photographs to be used for wrong reasons.

Opinions of some teachers in relation to these expressions are as follows:

T.I 1: "Functions in iPads are not well known and I can't use them in my lessons. I am trying to learn with the help of my colleagues and internet. I think we need training on this matter."

T.I. 2: "I believe that distribution of all course materials to students via digital environment may cause students to lose their writing and reading skills as well as cause laziness."

T.I. 3: "... another problem that I have encountered in iPad supported education is that students are not at the same skill level in using iPad and this reflects on the pace of progress in lesson."

T.I. 4: "... Students can access to other sites while we are lecturing. We should be able to see this and because we cannot see this some students may be busy with other applications while they seem to be listening to the lesson."

T.I. 5: "... Due to the fact that not all students have internet access at their homes sometimes we experience problems in communication. Especially regarding to submission of assignments."

T.I. 5: "For this type of education to be effective students should be informed on the use of iPads. Even during break time students prefer to play with iPads instead of talking to each other."

T.I. 6: "When there is no internet, we cannot complete a lesson within the period we planned. As a result for lessons we prepare we become disappointed and end up losing time over writing things on the board."

3.1.2. Teachers' Opinions Regarding the Advantages of Education With Tablet

Table 2. Teachers' opinions as a response to the question on advantages of education with tablets

Views	f
Speed of learning has increased thanks to visuals and interaction	26
Provides richness in material	21
Opportunity to repeat some subjects and ability to take care of the students more	19
Prevents loss of time	18
Motivation towards lessons has increased and lessons became more fun	16
Ability to use the opportunities provided by the internet	14
Made communication between students and teachers easier	13
Removes the time and space dimension	11
Easy sharing of materials with students	11

As it can be observed in Table 2 in teachers' opinion the biggest advantage of education with tablets is the increase in the speed of learning in students thanks to visuals and interaction. The least stated opinion is easy sharing of materials with students.

Opinions of some teachers in relation to these expressions are as follows;

T.I. 1: "using materials related to the subject of the lesson such as video, image and animations help students to grasp subjects better."

T.I. 2: "Owing to education with iPad time for lecturing has shortened and provided us with the opportunity to do more practice and review. As a result we can economise time and repeat subjects which are not well understood."

T.I. 3: "It is of great advantage for students who cannot come to school or miss the lesson. We can share all the materials with them even though they did not come to school and we can communicate with them. Material sharing is very easy."

T.I. 4: "We do not have to write the questions on the board. Since all the materials are available in students' iPads it is enough for them to note the solution only. As a result we can cover more questions and subjects."

T.I. 5: "I can easily reflect lecture notes to the board and this gives me time. In this way I have more time to deal with my students."

T.I. 5: "... Lessons are faster, more visual, more memorable, enjoyable and fun compared to traditional methods. Students are also very happy with this. They continuously state in class that they understand subjects better."

3.1. Opinion of Students Regarding the Use of Tablets in Education

3.1.1. Problems experienced by students in the use of tablets are listed in the table below.

Table 3. Students' opinions in relation to the problems they experienced in using tablets for education

Views	f
Falling behind in class due to freeze of applications	86
Blockage of application store	82
Insufficient battery life	79
Insufficient material	42
Difficulty in writing, slow writing	36
Assignments sent by teachers at inappropriate times	23
Disconnects in internet	21
Blockage of social networking	18
Unintentional deletion of works	18
Inexistence of a dictionary	14
Written materials working slowly	12
Harm on my visual health	12

As it can be seen in Table 3 the biggest problem encountered by students in using tablets in class is freezing and stopping of applications. Although slightly encountered, students stated falling behind in class due to freeze of applications, unintentional deletion of works, lack of a dictionary, not being able to install any application, slow process speed of written documents and teachers sending assignments without time among their problems.

Some student opinions regarding these expressions are as follows;

S. I. 1: "We do not have access to lessons when there is internet disconnection. I experience the same problem when the battery is empty. Applications and games that we use outside the class causes early battery discharge. This problem reflects upon lessons"

S.I.2: "Due to the App Store being removed on our devices we cannot install educational applications suggested by our teachers. At the same time YouTube being blocked prevents us from watching many useful videos. I think reinstallation of it would benefit us a lot."

S.I.3: "When I am concentrated the most on the lesson the iPad can freeze or the application shuts and I lose all my work. This causes me to lag behind in class."

S.I.4: "Our teachers usually send the assignments via internet. However our internet at home does not work from time to time. As a result I experience problems in receiving or sending back the assignments."

S.I.5: "I used an iPad for the first time at school. I experience difficulties in writing like many other features. As I am not used to the keypad of iPad I am very slow in taking notes and I lag behind in class. I think that I slow down the lesson and this affects me negatively."

S.I.6: "Because I play games when I am out of school I also think about the games during lessons and start thinking about the games I left unfinished. I think this affects my motivation. Some of my friends open games in class even. It is not possible for our teachers to see all of us."

3.1.2. Advantages Provided for Students by the Use of Tablet in Education are Tabulated Below.

Table 4. Students' opinions on advantages provided by use of tablets in education

Views	f
Opportunity to review lessons easily	184
Making it easier to understand lessons	134
Making lessons more fun	91
Providing richness in written materials	86
Fastening learning	84
Better comprehension of experiments	56
Time saving	53
Making teacher-student communication easier	52
Increasing motivation in class	49
Easier completion of assignments	31
Ability to use online resources	30
Not having to carry books and notepads	28
Increase in my success in numerical lessons	14

As it can be observed in Table 4 students stated that the ability to review lessons thanks to applications on tablets when they are unable to go to school or they did not benefit enough in class is the biggest advantage. Although small in number, students also stated that their rate of success has increased in numerical lessons with the use of tablets.

Some student opinions regarding these expressions are as follows;

S.I.1: "I find more opportunities to apply what our teacher taught in class. Thanks to visual materials such as videos and animations related to lessons what I learned is more permanent."

S.I. 2: "There have been days that I could not attend school because I was sick, but I never lagged behind from class. Because everything our teacher gives in lesson is on our tablets. I repeat the subjects I missed at home and when I go to school I can ask to my teacher the parts that I did not understand. In the same way we can complete assignments and easily send to the teacher."

S.I.3: "The time we used to spend writing we now use for review of parts we did not understand. This helps us in understanding subjects better."

S.I.4 "In Chemistry and some other lessons it helps us to understand the experiments better by watching videos and it makes the lesson much more fun."

S.I.5: "It meets many of students' educational needs. It is very useful to have our books in our tablets. Also we can access information on any subject thanks to internet. We have all information at our hands."

3.2. Opinions of Parents on the Use of Tablets in Education

3.2.1. Parents' concerns regarding the use of tablets is listed in Table 5.

Table 5. Parents' opinion on their concerns relating to education with tablets

Views	F
Games can decrease motivation	96
May cause health problems, especially in the eyes	94
May cause antisocial behaviour	84
Due to lack of knowledge we cannot check assignments	82
It decreases face-to-face interaction between the student and the teacher	42
They may spend too much time on social networks	39
May cause laziness	32
Technical problems interrupt the lessons and may cause concentration loss	26
Teacher's role and influence may decrease	22
May lose his/her focus in class	13
It may affect children's book reading habits	6

As it can be observed in Table 5 parents' biggest concern regarding education with tablet is the fear that children's motivation towards lessons will drop due to games on tablets and children spending much time with playing these. Although slightly, other concerns include decrease in teacher's role and influence, loss of focus in class, effect on book reading habits and students falling behind due to fast progress in lessons.

Opinions in relation to these expressions are as follows;

P.I.1: "My child directs his focus more to games than lessons. I believe this can distance them from their hobbies and affect their motivation in class. Students should definitely be informed on this subject."

P.I. 2: "I am worried about health problems which may be caused by the long time spent on internet, lessons and games. Especially it is of great danger for his eye health".

3.2.2. Parents' views on advantages of use of tablets in education are listed in Table 6.

Table 6. Parents' views on the question of advantages of education with tablets for students

Views	f
It removes the problem of falling behind from lessons	112
They can use the advantages and resources provided by the internet	95
It increases teacher-student communication	86
Their interest in technology may increase their interest in lessons	74
It makes research easier	44
Their willingness in relation to lessons has increased	43
Increases motivation	41
Digital literacy develops	40
Makes lessons and assignments easier and more fun	38
Improves their English vocabulary	28
Increases education quality	25
Makes learning easier by visuals and interaction	25
It is more useful to have all materials together	24
Saves time	21
Makes it easier for students to follow lessons	19

As it can be seen in Table 6, the biggest advantage of education with tablet for students is thought to be the end of the problem of missing on lessons as all subjects are on tablet environment. Also among statements which are low in number there is the view on tablets making following lessons easier.

Some opinions regarding these expressions are as follows;

P.I. 1: "In our opinion the biggest advantage of iPad supported education is the possibility to review and repeat lessons when they miss a lesson for being sick or for participating in another school activity."

P.I. 2: "My child used to get bored to search through books but now thanks to iPad he finds easily whatever he is looking for. He has easy access to everything he wants to learn via internet and he can do research. Especially he can contact his teacher easily from home."

P.I.3: "Teacher-Student communication, either regarding sending of assignments or responses is possible all the time with the iPads. I believe this keeps students' concentration at the highest level by not breaking them away from education."

4. Conclusion and Discussion

This study aims at identification of views of students, their parents and teachers at Near East College in North Cyprus on advantage, problems experienced during the use of tablets in education and opinions in relation to resolution of these problems. Teachers and students involved in the study have used tablets actively in their lessons. For this reason, from the perspective of advantages and problems of tablet supported education the fact that the case study is consisted of teachers and students who actively use tablets is very important in providing correct and reliable results. It is without doubt teachers who can follow the developments and changes in students on this subject (O'Connell, Freed & Rotheburg, 2010; Atal & Usluel, 2011).

Also as another group that students spend most of their time with, parents have been included in the study and it has been tried to identify their views and concerns, and they have been provided the opportunity to contribute to more active working of tablet supported education. It is without doubt that parents are able to observe lot of behaviour at home that teachers cannot (Lewin & Luckin, 2010). Following this parents' views are very valuable for this study. In this context, results requiring attention have been identified regarding problems experienced by teachers, students and parents in relation to use of tablets in education and solutions are proposed for these problems.

4.1. Problems experienced by Teachers, Students and Parents

If we look at the results in this line, we come across with connectivity and technical infrastructure problems which interrupts the lesson or even causes it to end as the biggest problem experienced by teachers and students during the learning activities. Similar to this Amelink and Scales (2010), and Gunduz, Aydemir and Isiklar (2011) in their studies have reached the conclusion that at the top of problems experienced by teachers and students in transferring into mobile learning environments is technical and infrastructure problems.

Another shared problem expressed by teachers and students is fast discharge of tablet batteries and the length of charging. It can be said that the biggest reasons of this situation is usage of tablets outside of class and for accessing social networks. In addition to this due to school lacking necessary equipment the absence of a charging station is also a big problem. This is a problem which can easily be relieved with some specific technical work. Teachers and students have stated early discharge of tablet battery as a problem in studies conducted by Pamuk, Ergun, Cakir and Yilmaz (2013), and Kucukaydin, Bozdogan and Ozturk (2014).

Another common problem identified is that the materials used by teachers and students are insufficient. Teachers stated that they experience problems due to the fact that they cannot prepare their own materials and they feel insufficient in material preparation. Teachers stated that materials in the application store do not always emphasize the points they wish and they are not free, thus they would like to prepare their own materials and increase variety. Directly linked to this this insufficiency of teachers is reflected upon the students and students also stated that materials on their tablets are not to the satisfactory level. Cetinkaya & Keser (2014) have concluded a similar outcome in their study and stated that teachers experience problems in finding materials and preparing lessons and this is reflected onto the lessons from the point of students.

If we look at the problems from the perspective of teachers, students' fondness of games and the decrease in their motivation and the effects on their performance of the time spent on games have been stated as an important problem. In their studies Cetinkaya and Keser (2014), Lanir (2012) and Ayvaci, Bakirci and Basak (2014) they stated that students spend long time on games in tablets and this affects students' motivation in class. Another important problem stated by teachers is the fact that students do not use iPads for educational purposes and they continue to use them for personal purposes (listening to music, watching videos, accessing social networks) and as a result they do not use their tablets at an effective level in class. They stated this as an important problem in interviews and they said students should be informed on how to use iPads in education. Dagtas (2013) and Cetinkaya and Keser (2014) in their studies concluded in support of these findings and they also concluded the result that teachers state informing of students on the use of tablets in education is a problem. On this matter the school administration can organize training sessions or seminars for students as well as parents. Another problem experienced by teachers is that they feel inadequate in using an iPad and they require in-service training. They stated that the use of tablets affect negatively students' face-to-face communication and their social development. They also stated that freezes happening on the devices cause concentration loss at students. Also they stated that reduction in the use of print material as a result of tablet use may distance students from tasks such as book reading and writing and may cause laziness in students. Teachers also stated that they are concerned about not being able to see with what the students are occupied with on their tablets and them not following the lesson. As stated above, lack of materials is among the problems experienced. Stated by few teachers it is thought to be useful if the students are informed on ethical uses of tablets in class. Although it is not in focus today students should be informed with trainings on this issue which came up recently.

In addition to problems shared by teachers and students alike, that are mentioned above, from the students' perspective application store being blocked by the school's administration is considered to be a big problem. Although the purpose of this is to limit students' access to games and social networks, it is also preventing them from accessing to educational content. This problem is mentioned by students. Students have also mentioned lack of materials and due to this problem they cannot access to materials they find. In order to resolve this issue, students must be informed and school administration should find more creative solutions. Students stated that low familiarity with tablets and slow pace in writing they lag behind in class. To resolve this, keyboards manufactured for tablets can be used. Students' are considering teachers sending homework or activities outside of school hours as a problem is an interesting result. Students accustomed to traditional teaching methods consider teachers sending assignments outside of school hours as a problem. Other problems mentioned include disconnection, unintentional deletion of works, not having a dictionary, slow processing of written materials, harm on visual health.

Students' concern about their visual health is an important result in relation to health. Similarly American Optometric Association (AOA) has published a report stating that technological devices may cause some health issues such as vision syndrome, eye tiredness, headache, blurred view and dry eyes (AFP Relaxnews, 2012). In addition to this, in many studies conducted the problem termed as vision syndrome in technological devices and the importance of measures against this problem are emphasized (Rosenfield, 2011; Ayvaci, Bakirci & Basak,

2014). Following this, in order to resolve health issues measures should be taken by teachers and students.

The biggest concern of parents, another of our study groups, regarding the use of tablets in education is that games may decrease students' motivation. Because the same result is also stated by teachers at the top of the list it can be said that parents are right in their concerns and these two results do support each other. Another issue of high concern is on the issue of health problems caused by tablets. Following this we can easily say that for parents the most important elements in their children's development are education and health. As a result it was an expected outcome that health issues are at the top of parents' concerns. On the issue of health students and parents expressed a common view and revealed the importance of it. Another important concern is related to the long times spent on a tablet and not interacting with other persons during this time. They stated that due to this reason they are concerned that their children may become antisocial individuals. Another important problem is parents' feeling inadequate in using tablets. For this reason they stated that they are not able to effectively and consciously follow their children's assignments and lessons and they require training on this. Another view of parents is that the teacher's role and influence will decrease. The reason for this is that they do not have adequate information on education with tablet. Parents think that students will only interact with tablets and not with their teachers and as a result their bond will weaken. However parents should be informed via seminars that the main reason for transitioning to tablet supported education is not to pursue education on tablets only but to support traditional learning methods and make information more lasting by increased interaction. By doing this we can resolve questions in parents' minds. Other concerns mentioned by parents can be listed as spending too much time on social networks, causing laziness, the possibility of distraction during class and effects on children's reading habits. In a recent study Gullupinar et al. (2013) stated that tablet supported education may affect reading and writing habits of students negatively. There exist many other studies with similar results which support the findings of this study (Ciftci, Taskaya & Alemdar, 2013; Kurt, Kuzu, Dursun, Gullupinar & Gultekin, 2013; Dursun, Kuzu, Kurt, Gullupinar & Gultekin, 2013; Yadigaroglu, 2014).

4.2. Advantages of using Tablets in the views of Teachers, Students and Parents

Despite high prices and occasional technical problems, tablets have started to be used as an important teaching tool in education for all advantages it provides such as increasing motivation of students or creation of the fruitful environment for their learning. In this part of the study we will discuss the results indicating what these advantages are.

From the perspective of teachers, generally we can say that tablets enable transfer of many visual materials in computer environment into tablet environment and use of these materials as coursework material and this provides time saving in class. In the light of the results obtained, it has emerged that tablet supported education adds visual elements to education and provides convenience and advantages in teaching subjects which are difficult to learn otherwise (Jones & Sinclair, 2011; Mills, 2012; Sad & Goktas, 2014).

Teachers stated the biggest benefit provided by tablet supported education is the increase in learning speed of students as a result of visuals and interaction provided by tablets. In the results among students they stated that with the help of tablets they learn in a faster and more fun manner. This situation signifies great importance in relation to effectiveness of education with tablets. With tablets students were able to interact by seeing, hearing and touching and learned subjects faster. As is known the more senses a teaching tool addresses the more increase in learning pace and lastingness. This is supported by many studies (Enriquez, 2010; Phillips & Loch, 2011; Shurtz, Halling & Mckay, 2011; Agca & Ozdemir, 2013; Krali, 2013; Lopez et al., 2013). Another important advantage stated by students and teachers is that tablets provide material richness and ability to use internet resources. Despite some teachers stating that they experience material insufficiency due to their inability to use tablets effectively, most of teachers and students expressed they benefited from online and available materials through tablets and tablets provide material richness. Most importantly they stated that they could

demonstrate experiments difficult to conduct in class with videos and images found online and this is a very important advantage. In support of this view students also mentioned that with tablets they understood many experiments better. As a similar result Romney (2010) and Ellington, Wilson and Nugent (2011) emphasized material richness provided by tablets and contribution of these materials towards education in studies they conducted. As another advantage teachers stated the opportunity to review subjects or go over points which each student did not understand thanks to time saving provided by tablets. Sharing the same views with their teachers students also stated that tablets provide time saving in lessons. As a result, students find the opportunity of individual learning. In this extra time students are able to ask questions that they were unable to ask during lesson and get the necessary information. This is an advantage for both students and teachers. Stickel (2009) and Mendelsohn (2012) as a result of their studies stated that tablets are an important individual learning environment and have a major contribute towards individual learning. Following this, teachers stated that tablets save time in class and prevents loss of time. Another result is that it stands out as an observation made by teachers that tablets increase motivation of students and make lessons more fun. Students have also stated that tablets increase their motivation in class. The increase in students' motivation with the use of tablets in education is also supported by many studies in the literature (Price & Simon, 2009; Mills, 2012). Teachers and students both stated that with tablets they could use all opportunities provided by the internet in lessons. We can understand the contribution of tablets to education better if we consider how big of an information source internet is and the convenience provided by tablets in reaching this resource. As a shared view between teachers and students the ability to communicate and exchange information with each other always and everywhere thanks to mobile features of tablets has been stated (Price & Simon, 2009; Mills, 2012). Tablets as mobile devices took their positions in education and provided us with the opportunity to access information independent of time and space (Nie, Armellini, Witthaus & Barklamb, 2011; Mills, 2012; Dallas, 2012; Pimmer, Linxen & Gröhbriel, 2012). In the study conducted by Shurtz, Halling and Mckay (2011) students expressed that tablets are helpful in increasing their level of information on lessons, their communication with other students and their motivation towards lessons. With the availability of cloud technologies in tablets students are always able to access to course notes and information uploaded by their teachers and repeat subjects they miss on days that they cannot attend school. Students and teachers stated this situation as a common opinion. Odabasi, Coklar, Kiyici and Akdogan (2005) and Mims and Holmes (2006) stated that in cases when subjects covered on tablets, course notes and activities are not presented to students via e-learning students missing school days will not be able to catch up with the information they missed due to not being able access to these notes. This highlights the importance of presenting courses to students via e-learning. As another result, students stated that they do not have to carry books and they can find more than books in a single tablet. A small number of students stated that with tablet supported education their success in science courses have increased more compared to other courses. As a reason for this they stated that as all subjects and questions are in the tablets they do not spend time on taking notes and instead focus on listening to their teachers, thus they spend their time that they save from writing to listening to their teacher and they do not miss any part of the subject.

Views shared by parents with students and parents are listed as the ability to repeat lessons anytime, time-saving, ability to use internet as a resource, provision of communication between student and teacher independent of time and space, increasing motivation and making lessons more fun. In addition to this, parents also think that with tablet supported education students' interest towards lesson will increase due to their familiarity and interest in technology. Along with this parents stated that thanks to internet connection students will find the opportunity to do research and they have all information at their hands. Parents also believe that technology has a great importance today and for this reason children will better keep up with the times and develop their technology literacy by using technology in their lessons. Parents also are in the opinion that due the devices working in English students will also benefit in terms of foreign language skills. Teachers mentioned that these kind of novelties applied in education will increase the quality of it and their children +will have a better future. Despite the order of

importance of advantages provided by tablet supported education changes for teachers, students and parents; it is apparent that most of advantages are considered to be common according to statements.

As in every study this study also has its own limitations. One of these limitations is on time. This study has been conducted during a semester. Studies will be conducted for resolution of the problems identified.

References

Adalier, A. (2012). Turkish and English language teacher candidates' perceived computer self-efficacy and attitudes toward computer, *The Turkish Online Journal of Educational Technology*, 11(1), 192-201.

AFP Relaxnews. (2012). iPads and tablets may cause eye problems or 'computer vision syndrome'. Daily News. Retrieved on 20 August 2014 from: <http://www.nydailynews.com/life-style/health/ipads-tablets-eye-problems-computer-vision-syndrome-article-1.1038685>

Agca R., & Ozdemir, S. (2013). Foreign language vocabulary learning with mobile technologies, *Procedia - Social and Behavioral Sciences*, 83, 781 – 785. 2nd World Conference on Educational Technology Researches 2012.

Al-Zeidieyeen, N. J., Mei, L. L., & Fook, F. S. (2010). Teachers' attitudes and levels of technology use in classrooms: the case of jordan schools. *International Educational Studies*, 3(2), 211-218.

Altun, T., Yigit, N., & Adanur, Z. (2011). İlköğretim öğrencilerinin bilgisayarla yönelik tutumlarının incelenmesi: Trabzon ili örneği. *Turkish Journal of Computer and Mathematics Education*, 2(3), 69-86.

Amelink, C. T., & G. R. Scales. (2010). "Student learning behaviors promoted with instructional technology", 40th ASEE/IEEE Frontiers in Education Conference, Washington, DC, October 27 – 30, 2010.

Atal, D., & Usluel, Y. K. (2011). İlköğretim öğrencilerinin okul içinde ve dışında teknoloji kullanımları. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 41, 24-35.

Ayvaci, H., Bakirci, H., & Basak, M., (2014). Fatih projesinin uygulama sürecinde ortaya çıkan sorunların idareciler, öğretmenler ve öğrenciler tarafından değerlendirilmesi, *YYU Eğitim Fakültesi Dergisi*, 11(I), 20-46.

Culén, A. L., & Gasparini, A. (2011). "iPad: a new classroom technology?" A report from two pilot studies", INFFuture Proceedings, 2011, 199-208. Retrieved on 28 July 2014 from: <http://infoz.ffzg.hr/INFFuture/papers/302%20Culen,%20Gasparini,%20iPad%20%20A%20New%20Classroom%20Technology.pdf>

Cetinkaya, L., & Keser, H. (2014). Öğretmen ve Öğrencilerin Tablet Bilgisayar Kullanımında Yasadıkları Sorunlar ve Cozum Onerileri. *Anadolu Journal of Educational Sciences*.

Ciftci, S., Taskaya, M. S., & Alemdar, M. (2013). Sınıf öğretmenlerinin fatih projesine iliskin görüşleri. *İlköğretim Online*, 12(1), 227-240.

Dallas, M. E. (2012). Health Day. Overloaded Backpacks Can Injure Kids: Experts. Retrieved on 12 August 2014 from: <http://consumer.healthday.com/Article.asp?AID=667521>

Dagtas, A. (2013). Öğretmenlerin Basılı Sayfa ve Ekrandan Okuma Tercihleri İle Eğitimde Elektronik Metin Kullanımına Yonelik Görüşleri. *Electronic Turkish Studies*, 8(3), 137-161.

Dewitt D., & Siraj, S. (2010). Learners' perceptions of technology for design of a collaborative m-learning module. *World Journal on Educational Technology*, 3(2), 169-185.

Dursun, O. O., Kuzu, A., Kurt, A. A., Gullupinar, F., & Gultekin, M. (2013). Okul yöneticilerinin fatih projesinin pilot uygulama sürecine iliskin görüşleri. *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, 3(1), 100-113.

Ellington, A. J., Wilson, J. H., & Nugent, J. S. (2011). Use of Tablet PCs to Enhance Instruction and Promote Group Collaboration in a Course to Prepare Future Mathematics Specialists. *Mathematics and Computer Education*, 45(2), 92-105.

Enriquez, A. G. (2010). Enhancing student performance using tablet computers. *College Teaching*, 58(3), 77-84.

Soykan, E. (2015). Views of students', teachers' and parents' on the tablet computer usage in education. *Cypriot Journal of Educational Sciences*, 10(3), 228-244. doi: <http://dx.doi.org/10.18844/cjes.v1i1.68>

Genc, M., & Genc, T. (2013). Ogretmenlerin mesleki gelismeleri takip etme durumları; fatih projesi ornegi. *Ahi Evran Universitesi Kırsehir Egitim Fakultesi Dergisi*, 14(2), 61-78.

Gok, T. (2012). Real-Time Assessment of Problem-Solving of Physics Students Using Computer-Based Technology. *Hacettepe University Journal of Education*, 43, 210-221.

Gullupinar, F., Kuzu, A. O., Dursun, A., Kert, A., & Gultekin, M. (2013). Milli Egitimde Teknoloji Kullanimi ve Sonucları: Velilerin Bakış Acisindan Fatih Projesi'nin Pilot Uygulamasının Degerlendirilmesi. *Journal of Social Sciences*, 30, 195-216

Gunduz, S., Aydemir, O., & Isiklar, S. (2011). 3Gteknolojisi ile gelistirilmis m-ogrenme ortamlari hakkında ogretim elemanlarının gorusleri. *Selcuk Universitesi Ahmet Kelesoglu Egitim Fakultesi Dergisi*, 31, 101-113.

Jones, J. L., & Sinclair, B. (2011). Assessment on the go: Surveying students with an iPad. *Journal of Library Innovation*, 2(2), 22-35.

Kirali, F. N. (2013). Fatih Projesi Kapsamında Dagitilan Tablet-PC Uygulamalari"na iliskin ogrenci gorusleri. Yuksek Lisans Tezi, Bahcesehir Universitesi, Fen Bilimleri Enstitusu Bilgi Teknolojileri, Istanbul.

Kucukaydin, Z. A., Bozdogan, & Ozturk, P. (2014). Secondary School Students' Views in a Village School about the Use of Tablet Computers in Science Course. *Mevlana International Journal of Education (MIJE)*, 4(2), 53-59.

Kurt, A. A., Kuzu, A., Dursun, O. O., Gullupinar, F., & Gultekin, M. (2013). Fatih projesinin pilot uygulama surecinin degerlendirilmesi: Ogretmen gorusleri. *Journal of Instructional Technologies & Teacher Education*, 1(2), 1-23.

Lanir, L. (2012). Decoded Science. Digital Information Overload Overwhelms and Distracts Students. Retrieved on 18 July 2014 from: <http://www.decodedscience.com/digital-information-overload-overwhelms-and-distracts-students/19798>

Lewin, C., & Luckin, R. (2010). Technology to support parental engagement in elementary education: Lessons learned from the UK. *Computers & Education*, 54(3), 749-758.

Loch, B., Galligan, L., Hobohm, C., & McDonald, C. (2011). Learner-centred mathematics and statistics education using netbook tablet PCs. *International Journal of Mathematical Education in Science & Technology*, 42(7), 939-949.

Lopez, F., Fortiz, R., Almendros, R., & Segura, M. (2013). Mobile learning technology based on iOS devices to support students with special education needs, *Computers & Education*, 61, 77-90

Martin, S., Diaz, G., Sancristobal, E., Gil, R., Castro, M., & Peire, J. (2011). New technology trends in education: Seven years of forecasts and convergence. *Computers & Education*, 57, 1893-1906.

Mendelsohn, T. (2012). The Independent. Ten great free education apps for the iPad. Retrieved on 19 July 2014 from: <http://www.independent.co.uk/student/student-life/technology-gaming/ten-great-free-education-apps-for-the-ipad-6297153.htm>

Menzi, N., Onal, N., & Caliskan, E. (2012). Mobil Teknolojilerin Egitim Amacli Kullanimina Yonelik Akademisyen Goruslerinin Teknoloji Kabul Modeli Cercevesinde incelenmesi. *Ege Egitim Dergisi*, 1(13), 40-551

Mills, M. (2012). PBS. National PBS Survey Finds Teachers Want More Access to Classroom Tech. Retrieved on 19 August 2014 from: <http://www.pbs.org/about/news/archive/2012/teacher-survey-fetc/>

Mulholland, J. B. (2011). iPad's strengthen education. *Government Technology*, 24(4), 20-24.

Nie, M., Armellini, A., Witthaus, G., & Barklamb, K. (2011) How do e-book readers enhance learning opportunities for distance work-based learners?. *Research in Learning Technology*, 19(1), 19-38.

O'Connell, T., Freed, G., & Rotheburg, M. (2010). Using Apple Technology to Support Learning for Students with Sensory and Learning Disabilities. in Apple in Education: *Teachers and Administrators*.

Odabasi, F., Coklar, A. N., Kiyici, M., & Akdogan, E. P. (2005). Ilkogretim Birinci Kademedede Web Uzerinden Ders Islenebilirligi. *The Turkish Online Journal of Educational Technology (TOJET)*, 4(4), 182- 190. Retrieved on 2 June 2014 from: www.tojet.net/articles/4421.doc

Ozdamli, F., & Uzunboylu, H. (2014). M-learning adequacy and perceptions of students and teachers in secondary schools. *British Journal of Educational Technology*.

Terras, M. M., & Ramsay, J. (2012). The five central psychological challenges facing effective mobile learning. *British Journal of Educational Technology*, 43, 820-832.

Pamuk, S., Ergun, M., Cakir, R., & Yilmaz, H. B. (2013). Ogretmen ve Ogrenci Bakis Acisiyla Tablet PC ve Etkilesimli Tahta Kullanimi: FATIH Projesi Degerlendirmesi. *Egitim Danismanligi ve Arastirma*

Merkezi. Retrieved on 14 July 2014 from: <https://www.edam.com.tr/kuyeb/pdf/tr/2faf8f3b3640e5c8e79f78fbf1fd3635muktr.pdf>

Park, S. Y., Nam, M. W., & Cha, S. B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, 43(4), 592-605.

Park, S.Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Educational Technology & Society*, 12(3), 150-162.

Peck, K. L., & Dorricott, D. (1994). Why use technology? *Educational Leadership*, 51(7), 11-14. Retrieved on 21 May 2014 from: <http://www.ascd.org/publications/educational-leadership/apr94/vol51/num07/Why-Use-Technology%C2%A2.aspx>

Phillips, P., & Loch, B. (2011). Building Lectures and Building Bridges with Socio-Economically Disadvantaged Students. *Educational Technology & Society*, 14(3), 240-251.

Pimmer, C., Linxen, S., & Gröbliel, U. (2012), Facebook as a learning tool? A case study on the appropriation of social network sites from mobile phones in developing countries. *British Journal of Educational Technology*, 43, 726-738.

Price, E., & Simon, B. (2009). Ubiquitous Presenter: A Tablet PC-Based System to Support Instructors and Students. *Physics Teacher*, 47(9), 570-573.

Romney, C. A. (2010). Tablet PCs in undergraduate mathematics. 40th ASEE/IEEE Frontiers in Education, Washington, DC.

Rosenfield M. (2011). Computer vision syndrome: a review of ocular causes and potential treatments. *Ophthalmic & Physiological Optics*, 31(5), 502-515.

Saran, M., Seferoglu, G., & Cagiltay, K. (2009). Mobile assisted language learning: English pronunciation at learners' fingertips. *Eurasian Journal of Educational Research*, 34, 97-114.

Shurtz, S., Halling, T. D., & McKay, B. (2011). Assessing user preferences to circulate iPads in an Academic Medical Library. *Journal of Electronic Resources in Medical Libraries*, 8(4), 311-324.

Stickel, M. M. (2009). Impact of lecturing with the tablet PC on students of different learning styles. 39th ASEE/IEEE Frontiers in Education Conference, San Antonio, TX.

Sad, S. N., & Goktas, O. (2014), Preservice teachers' perceptions about using mobile phones and laptops in education as mobile learning tools. *British Journal of Educational Technology*, 45, 606-618.

Tariman, B. (2011). Sosyal Bilgiler Egitiminde Sosyal Bilgiler Laboratuarlarinin Yeri ve Onemi, (Ed. R. Turan, A.M. Sunbul & H. Akdag), *Sosyal Bilgiler Ogretiminde Yeni Yaklasimlar II*. Ankara: Pegem A Yayıncılık.

Tarimer, I., & Okumus I. T., (2010). Mobil Iletisim Cihazlarinin Egitim Araci Olarak Kullanilmasi, *Bilisim Teknolojileri Dergisi*, 3(3).

Tsai, C. Y., Wang, C. C., & Lu, M. T. (2011). Using the technology acceptance model to analyze ease of use of a mobile communication system. *Social Behavior and Personality*, 39(1), 65-70.

Uzunboylu, H., Cavus, N., & Ercag, E. (2009). Using mobile learning to increase environmental awareness. *Computers & Education*, 52, 381-389

Vavoula, G., Sharples, M., Rudman, P., Meek, J., & Lonsdale, P. (2009). Myartspace: Design and evaluation of support for learning with multimedia phones between classrooms and museums. *Computers & Education*, 53, 286-299.

Fadare, O. G., Aladeselu, V. A., Ekuobase, G., Aboderin, O. S., & Kumuyi, G. J. (2013). Adoption of mobile learning among 3G-enabled handheld users using extended technology acceptance model. *World Journal on Educational Technology*, 5(3), 420-430.

Wang, J., Doll, J. W., Deng, X., Park, K., & Yang, G. M. (2013). The impact of faculty perceived reconfigurability of learning management systems on effective teaching practices. *Computers & Education*, 61, 146-157

Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40(1), 92-118.

Yadigaroglu, M. (2014). Kimya ogretmenlerinin teknolojik pedagojik alan bilgisi modeline yonelik bilgi ve becerilerinin gelistirilmesi amaciyla bir hizmet ici egitim kurs programi duzenlenmesi ve etkililikinin arastirilmasi. Yayımlanmamış doktora tezi, Karadeniz Teknik Universitesi, Egitim Bilimleri Enstitusu, Trabzon.